Louisiana Environmental Protection and Sustainability Postsecondary Interview Summary

June 2020

Eight professors who completed the Louisiana Environmental Protection and Sustainability survey agreed to a 30-minute phone interview with an SREB researcher to discuss various components of a proposed Environmental Protection and Sustainability pathway for students. The interview questions — see page 3 — focused on credential-earning and work-based learning opportunities for high school students, what an environmental pathway for students might look like, what high school preparation was needed for an environmental college major, among other topics. Interviews were taped and transcribed. Transcriptions were coded, from which themes emerged. A summary of themes and related feedback are provided below.

Interviewed professors represented Louisiana State University – Baton Rouge, Louisiana Tech – Ruston, Northwestern State University, Southern University and A&M College, Southeastern Louisiana University – Hammond, University of Louisiana – Lafayette and University of Louisiana – Monroe. Besides being professors, interviewees were also atmospheric scientists, biologists, engineers, environmentalists, geologists and wildlife and fisheries specialists.

University environmental majors included aquatics and the conservation of species, atmospheric sciences, biology, chemistry, civil engineering, coastal geology, conservation biology, energy sustainability, engineering, environmental engineering, environmental microbiology, fishery management, forestry, forestry management, a general environmental ecological program, geohydrology, geosciences, restoration management and wildlife ecology and management.

Interview Themes

Student Preparation for Environmental Careers

The environment is a very broad area of study. Both the natural sciences and the physical sciences are included. Students should take courses in biology, calculus, chemistry, physics and statistics. Students should also have a complete understanding of science, including theory and practice. With a strong theoretical background and lab expertise, individuals can be very successful in this field.

Major Goals of University Environmental Programs

Examples of university programs' goals included the following:

- Our goal is to bridge students out of high school into a program that sets them up to be successful in an environmental [and] sustainability economy.
- We prepare the next generation of professionals and leaders in the application of the advancement of science theory and practice and the stewardship and management of natural resources.
- We provide undergraduates with the tools they need to understand environmental hazards and litigation, the toxins and components of the environment, and the geological processes that affects those things.

- We teach students to successfully handle emergencies and hazardous materials, do anything with building design, support emission control and conduct inspections.

High School Student Environmental Certifications

Interviewees suggested that students could begin a variety of environmental credentials at the secondary level. The most frequently mentioned credentials were Certified Hazardous Waste Materials Manager, First Responder, Forestry, Professional Environmental Manager, Professional Wetlands Scientist and Sustainability Certificate.

High School Student Environmental Work-Related Activities

Interviewees mentioned a variety of environmental work-related activities that could begin at the high school level:

- Job shadowing in science-related industries, zoos or fisheries
- Completing internships
- Working in university research labs and doing field work
- Volunteering at the Department of Agriculture, the Department of Environmental Quality, the Department of Forestry or the National Weather Service
- Learning biological techniques in the pre-college Howard Hughes program

An Ideal Environmental Protection and Sustainability Pathway Program for Students

- Families need to be aware of environmental opportunities so they can encourage their children. There needs to be an outreach to parents and guardians to provide strength and support. If parents are well-educated about environmental opportunities, it can only help.
- Besides science and math, a broadly-based environmental science course that includes all the options and the needed skills.
- Students have options on how they get their degree and their choices are based on their interests. There is great flexibility in the environmental sciences.
- Have an ecology class so students learn about ecosystems. The lab component is critical.
- Include character.
- Strong background in math, biology, chemistry and computer science, including productivity software.
- The importance of demonstrating through projects via web pages, videos and short presentations is critical. Projects build confidence. Mastery of projects completely changes a first job experience for graduates.
- Students must understand the mobility of environmental development and receive a well-rounded, broad education. They must learn intellectual tools as quickly as possible.

Praise for the New EPS Pathway

- It is good to see this move forward for the students. This is a bridge from high school to the marketplace.
- There are other pathways in the sciences besides a doctor or a dentist. There are always going to be jobs in the environmental sciences.
- It is wonderful to get students to think about a pathway as early as possible so they can get into the right program in college. Get a certificate in high school or an internship. Time is wasted when students change their majors. How do we get to these students?

Suggested Contacts for the EPS Design Team

- Dr. Andrew Hamilton, University of North Carolina at Greensboro, Dean of Undergraduate Studies and Student Success
- Dr. Anne Case Hanks, University of Louisiana – Monroe, Atmospheric Sciences
- Dr. Elizabeth Matthews, Louisiana Tech – Ruston, Sustainability

LADOE Environmental Pathway Postsecondary Representatives' Interview Questions – May 2020

Name of Interviewee:_____ Date:_____

University:_____ City: _____

Degrees:_____

1. What are the objectives of your university's environmental program?

2. What type of student/person will be successful in your environmental program?

3. What does an ideal environmental career pathway that guarantees success look like for students?

4. a. As we look at industry-based environmental credentials for postsecondary students, what opportunities are there for high school students to start earning these credentials?

   b. Which industry-based credentials are appropriate for high school students?

5. a. Of the environmental work-based learning options in your program, which of these can be extended to the high school level?

   b. How can we get high school students started in these work-based learning options?

6. Describe the outstanding or unique features of your environmental program.

7. a. What percentage of your environmental graduates stay in-state and go out-of-state for work?

   b. How easy/difficult is it for your environment program graduates to find work?

8. Do you have additional comments or questions?